

*On the Proper Motion of Lalande 21258 and Groombridge 1830.*  
By W. T. Lynn, B.A.

That the small star numbered 21258 in Lalande's Catalogue (which is of the 8-9 magnitude), is subject to a large proper motion, amounting to nearly  $4''.5$  in a great circle, was discovered by Prof. Argelander, and announced by him as one of the results of the Bonn observations.\* This has been fully confirmed by more recent observations at the Royal Observatory, Greenwich. A comparison of the latter, which were made in 1864 and 1869, *inter se*, gives for the annual proper motion,—

In R.A. —  $0^s.386$

In N.P.D. —  $1''.36$ .

It should be mentioned that if the place given in the Greenwich Seven-Year Catalogue for 1864 be corrected for the fractional part of the proper motion, the result is,—

Mean R.A. 1864, Jan. 1	$10^h 58^m 42^s.55$
Mean N.P.D. „	$45^\circ 46' 33''.67$ ;

and if that given in the Greenwich Annual Catalogue for 1869 be also so corrected, the result is,—

Mean R.A. 1869, Jan. 1	$10^h 58^m 57^s.70$
Mean N.P.D. „	$45^\circ 48' 3''.58$ .

The parallax of this star has been determined by Dr. Auwers to be  $0''.27$ , corresponding to a distance of 761,000 times that of the Sun, or about twelve light-years.

I avail myself of this opportunity to give another determination of the proper motion of Groombridge 1830, by means of places resulting from later Greenwich observations, in continuation of those quoted by me in *Monthly Notices* for June 10, 1870 (vol. xxx. p. 204).

The final reductions of the observations of this now famous star made in 1869, 1870, and 1871 (more have been made in 1872) furnish the following results,—

Year.	Mean R.A. Jan. 1.	No. of Obs.	Mean N.P.D. Jan. 1.	No. of Obs.
	<sup>h</sup> <sup>m</sup> <sup>s</sup>		<sup>o</sup> <sup>'</sup> <sup>''</sup>	
1869	11 45 25.24	2	51 20 29.98	2
1870	11 45 28.78	3	51 20 55.54	4
1871	11 45 32.19	4	51 21 21.01	4

\* *Astronomische Nachrichten*, vol. liv. p. 245.

† *Astronomische Nachrichten*, vol. lix. p. 325, and *Monthly Notices*, vol. xxiv. p. 71.

If these be all reduced to the mean epoch 1870, the resulting mean place for January 1 of that year will be,—

$$\text{R.A. } 11^{\text{h}} 45^{\text{m}} 28^{\text{s}}.74$$

$$\text{N.P.D. } 51^{\circ} 20' 55''.51$$

from nine and ten observations in each element respectively. This may now be compared with the result obtained from the Greenwich 12-year Catalogue, and a proper motion be thus deduced from a large number of observations separated from each other by a very considerable interval of time. The mean place in question is, for the epoch 1845, January 1,—

$$\text{R.A. } 11^{\text{h}} 44^{\text{m}} 18^{\text{s}}.53$$

$$\text{N.P.D. } 51^{\circ} 10' 10''.90,$$

derived from thirteen and sixteen observations in each co-ordinate respectively.

The annual proper motion deducible from a comparison of these two results, the epochs of which are twenty-five years apart, is,—

$$\text{In R.A. } + 0''.344$$

$$\text{In N.P.D. } + 5''.77.$$

This is equivalent to  $7''.03$  in a great circle, which is well known to be the largest stellar proper motion hitherto recognised. So far as I am aware, those of five other stars only exceed the half of this quantity, viz., 61 *Cygni*, Lalande 21185, Lalande 21258,  $\mu$  *Cassiopeiæ*, and  $\delta^2$  *Eridani*. The two latter of these have not I believe as yet been subjected to an investigation for parallax.

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*Note on the Colours of the Components of  $\gamma$  Delphini.*

By Thos. G. E. Elger, Esq.

The remarkable discrepancies in the recorded colour-estimations of this well-known double-star, induced me in the autumn of 1866 to commence a series of observations, with a view to determine if they were due to actual changes in the colours of the components, or merely to what Smyth terms "personal chromatic equation." I am aware that, owing to the difficulty of referring star-colours to an absolute standard, observations of this nature must be to a certain extent unsatisfactory; yet, if a definite chromatic scale be used, and proper precautions taken, although we may not be able to speak with confidence as regards slight